



School Technology

Current and Planned Investments to
Support Remote Learning

May 11, 2020

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Introduction

This report reflects responses to a statewide survey with data collected April 7 – 27, 2020 from district leaders regarding their current technology resources as well as their planned investments. The impetus for this research stems from COVID-19 school closures that began in March 2020 and the resulting adoption of technology to support remote learning. The report includes data from all completed responses, representing **105 public school districts** from every [district reference group \(DRG\)](#) — a classification tied to socioeconomic status and need — and serving a total of **355,782 students** statewide:

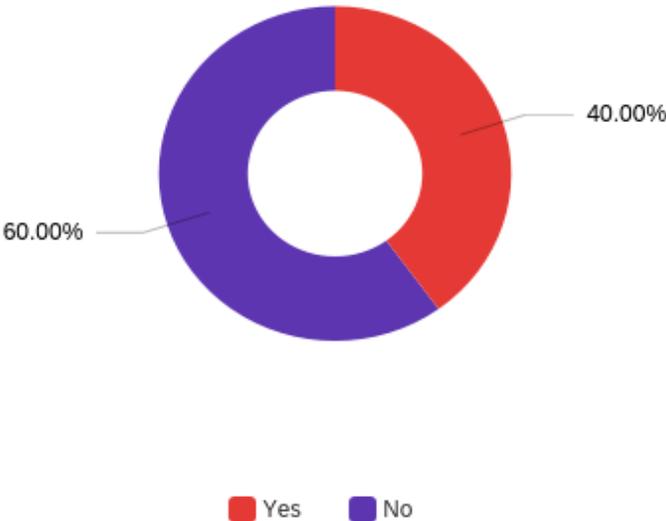
ACES	Hebron	Region 16
Ansonia	Killingly	Ridgefield
Avon	LEARN	Salem
Berlin	Lebanon	Seymour
Bethany	Ledyard	Shelton
Bethel	Madison	Sherman
Bloomfield	Manchester	Somers
Branford	Meriden	South Windsor
Bridgeport	Middletown	Southington
Brookfield	Monroe	Sprague
Brooklyn	Montville	Stafford
Canton	Naugatuck	Stamford
Capitol Region Education Council (CREC)	New London	Sterling
Chaplin	New Milford	Stonington
Clinton	Newington	Stratford
Connecticut Technical Education and Career System	Newtown	Suffield
Coventry	North Haven	Thomaston
Cromwell	North Stonington	Thompson
Danbury	Norwalk	Torrington
East Granby	Norwich Free Academy	Trumbull
East Haddam	Norwich	Vernon
East Haven	Old Saybrook	Wallingford
East Lyme	Oxford	Waterbury
East Windsor	Plainville	Waterford
Easton-Redding	Portland	Watertown
Ellington	Putnam	West Hartford
Fairfield	Region 1	Westbrook
Farmington	Region 4	Weston
Greenwich	Region 6	Westport
Griswold	Region 8	Wilton
Guilford	Region 9	Winchester
Hampton	Region 10	Windham
Hartland School	Region 11	Windsor Locks
	Region 14	Windsor
	Region 15	Wolcott
	Region 19	Woodbridge

Current Technology Resources

The following data come from survey questions regarding district technology resources **prior to school closings** brought about to reduce the spread of COVID-19.

Homework Gap Measure

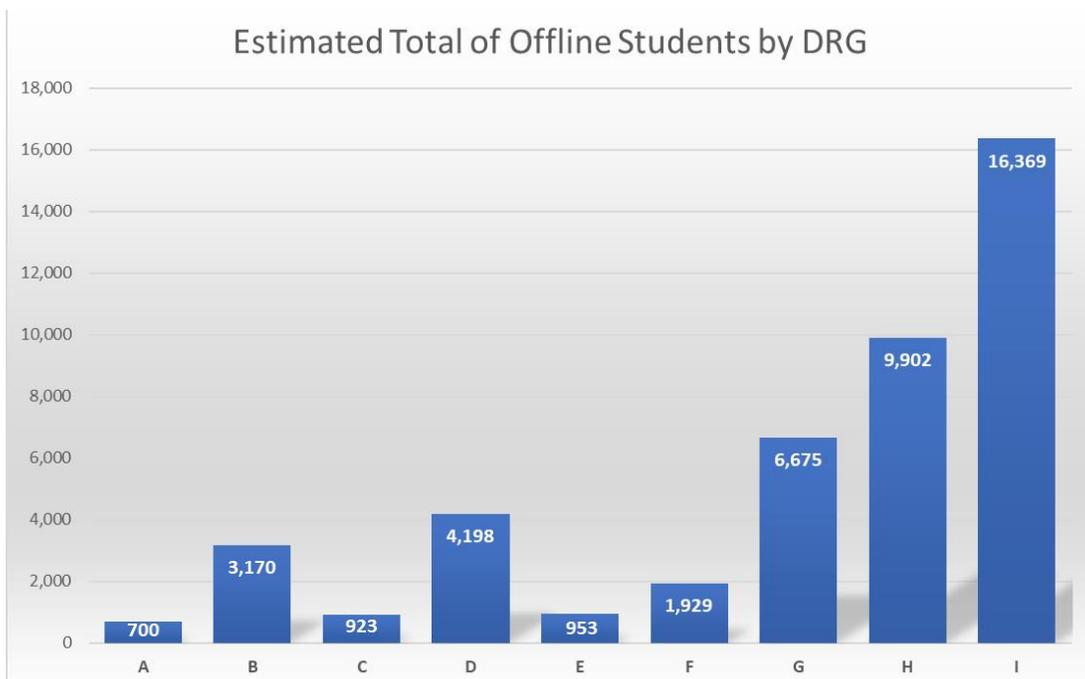
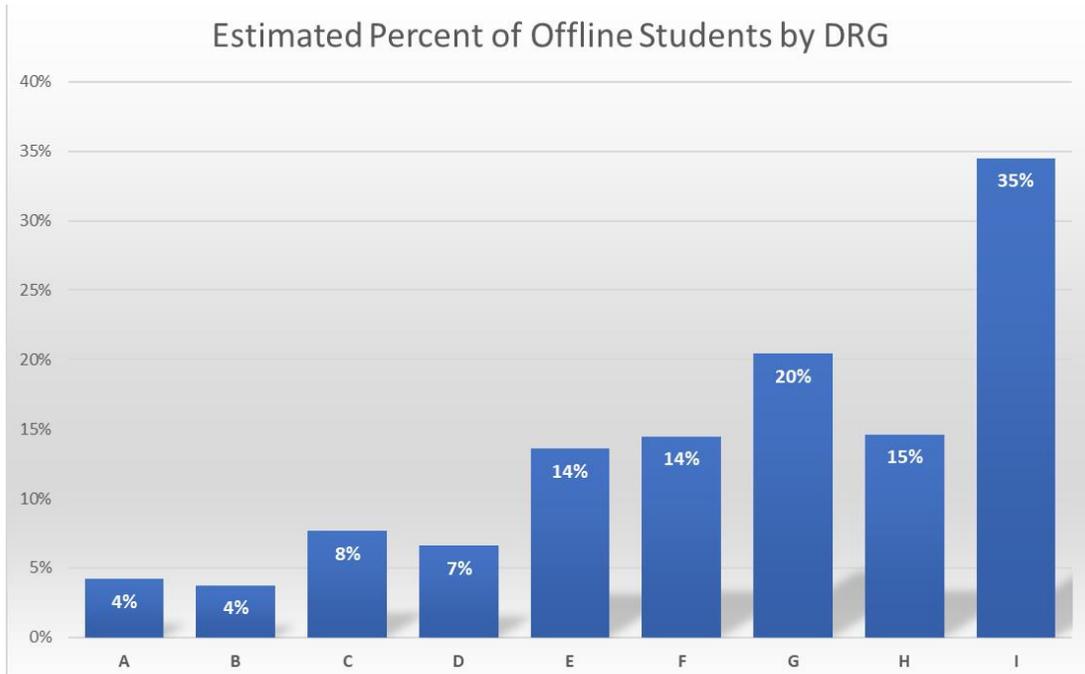
Q: Does your district have an accurate measure of home broadband Internet connectivity for all students? A broadband connection provides a minimum speed of 25 Mbps for downloads and 3 Mbps for uploads (FCC 2015).



Gauging home Internet access remains difficult and requires strong family engagement efforts to collect data digitally and through paper surveys or phone interviews. Challenges in collecting this data include low response rates from families as well as defining, gathering, and measuring data that accurately reflect true levels of connectivity. For example, for two families that indicate they have an Internet connection, one may have a dedicated 100-Mbps connection used by a single student with her own computer, and another family may depend on a 5-Mbps connection provided through a parent's mobile phone — available only when they are *not* at work — shared among five students with a single device.

Home Internet Access

Q: Prior to the switch to remote learning, what percent of your district's students had home broadband Internet access? If you do not have an accurate measure, estimate to the best of your ability.

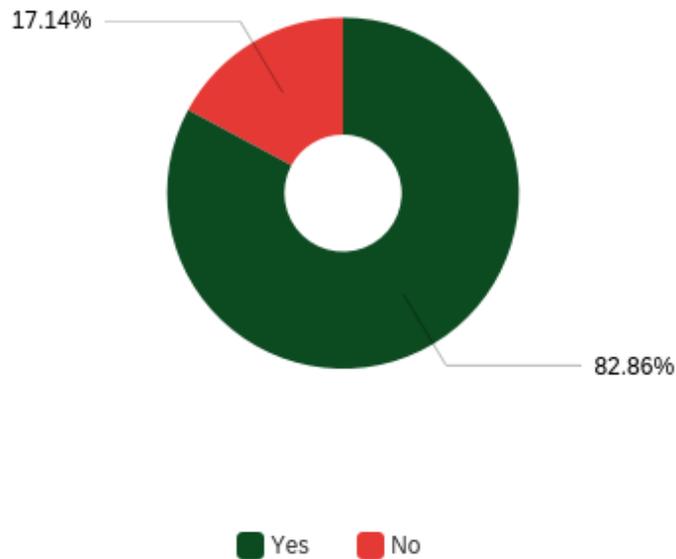




Calculations above are based on 2019 – 2020 enrollment totals multiplied by district estimates of the percentage of students without home Internet access. While only estimates, the data do skew — as expected — toward families in more socio-economically challenged communities.

Interest in Statewide Homework Gap Survey

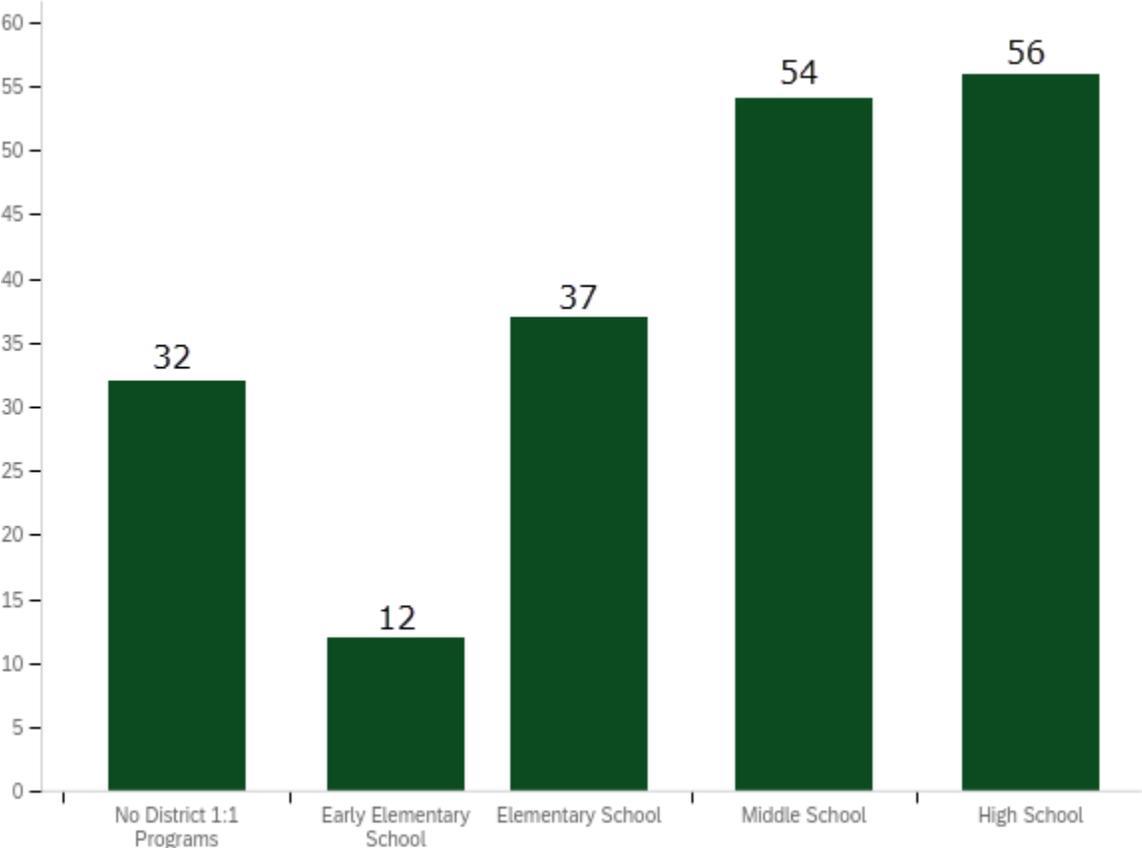
Q: Would your district have interest in participating in a statewide survey to identify home connectivity needs of students?



The Commission is currently developing a statewide home Internet connectivity survey in partnership with CAPSS and Project Tomorrow. The resulting data will help empower districts to quantify and address connectivity needs to support remote learning and position Connecticut's "homework gap" challenges in a national context, given the anonymous pooling and analysis of our state's results as part of Project Tomorrow's national data set.

Current 1:1 Computer Programs

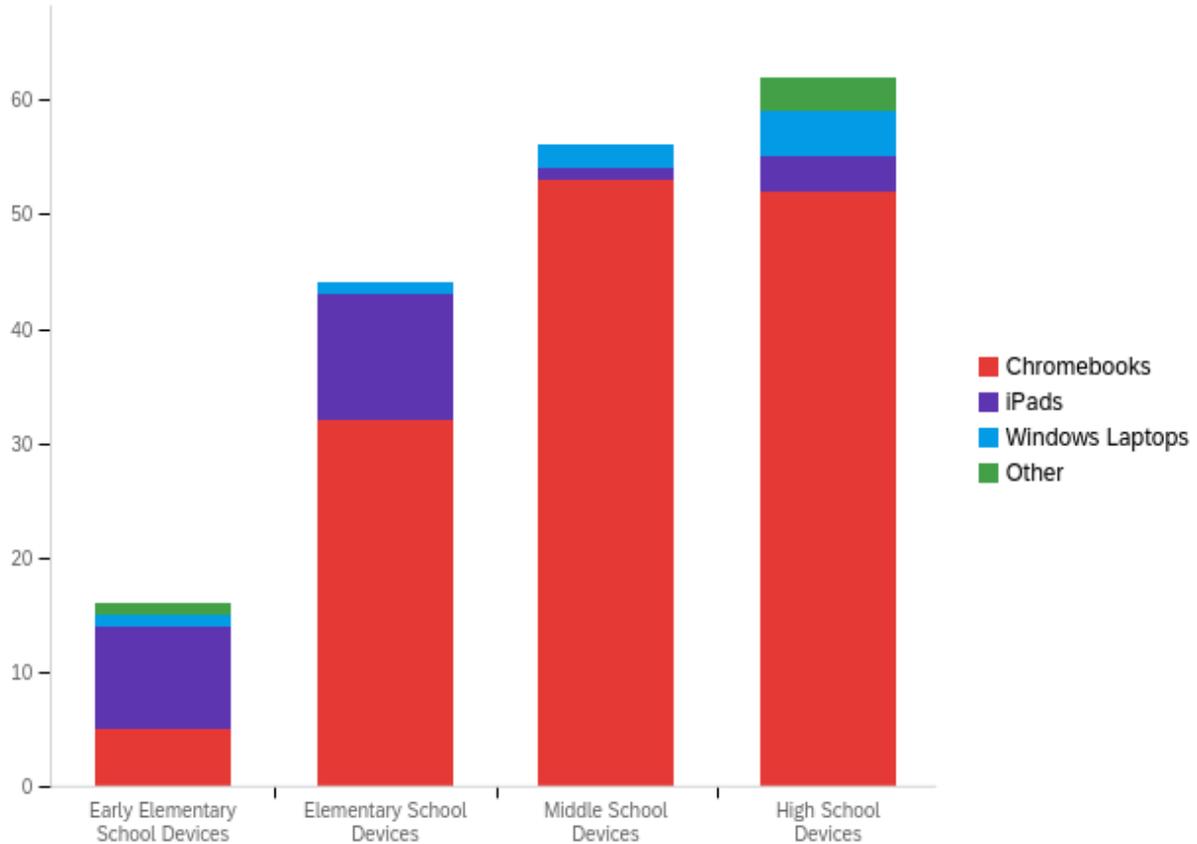
Q: At what grade level(s) does your district provide devices for students to use in school and take home (e.g., 1:1 program)? Select all that apply and choose the best fit for the grade bands in your district. For example, "Early Elementary" may be PK – 3 in some districts, K – 3 in others.



While approximately a third of responding districts indicated that they do not have a 1:1 computer program, during school closures starting in March, many have sent home computers normally stored in carts.

1:1 Devices by Grade

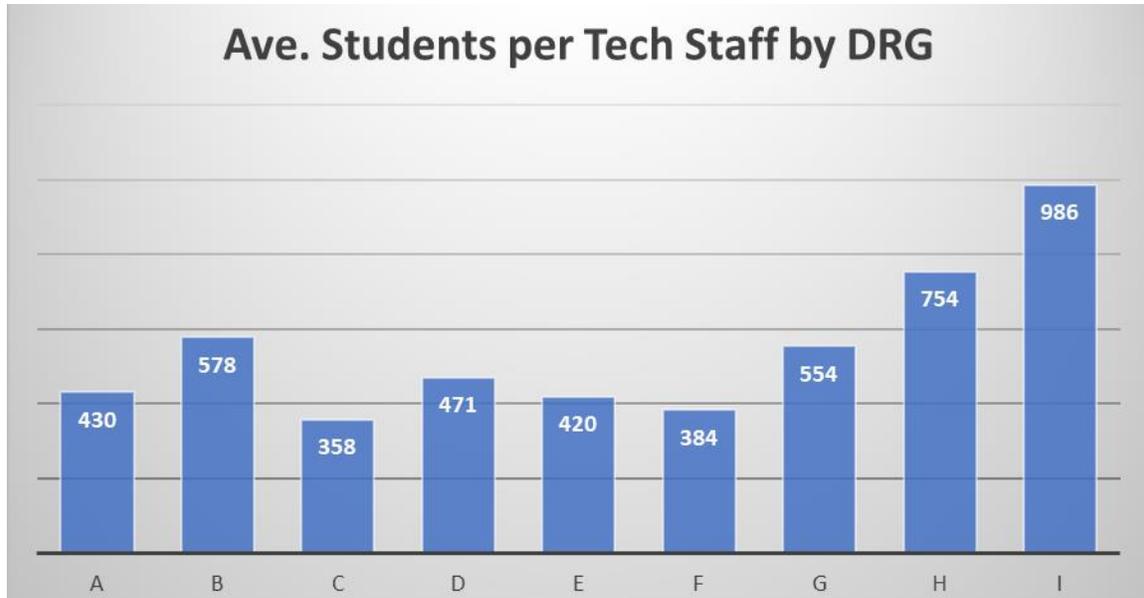
Q: What devices do you provide students to support 1:1 programs at your schools, by grade level? Select all that apply.



Nearly every district in Connecticut uses Google to manage student accounts, and the vast majority use Google Chromebooks and Google software to support 1:1 computing programs, especially in the secondary grades.

Technology Staff

Q: How many full-time and contracted technology staff do you have?



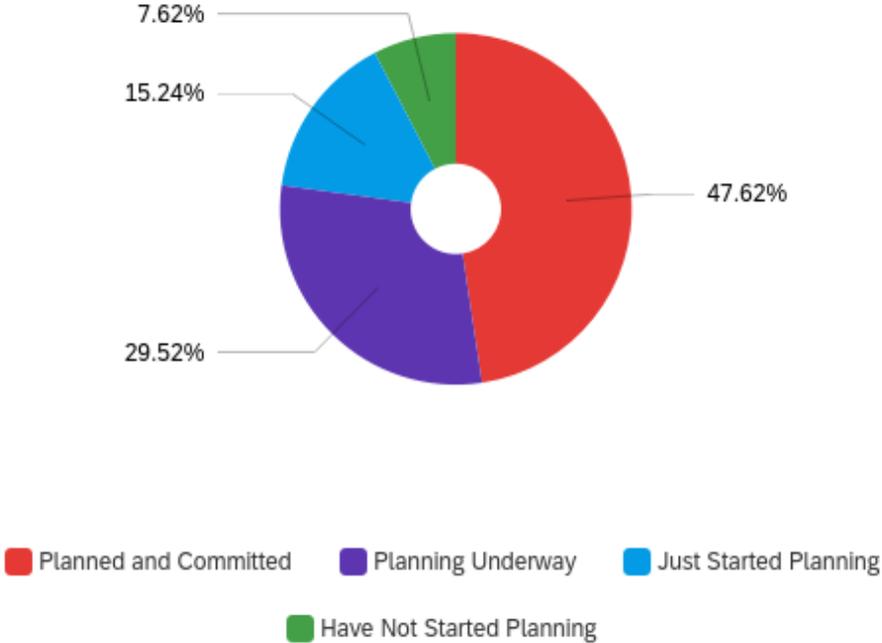
The above data are collective ratios to 2019 – 2020 student enrollment counts to technical staff, as a general gauge of support capabilities. The higher the number, the fewer technical staff available to support district technology needs. For context, support ratios in non-education sectors generally run between 45:1 and 70:1.

Planned Technology Investments

The following set of questions address districts' **plans to invest** in a variety of technology devices, connectivity solutions, software, professional development, and staff to support remote and blended learning in a period when schools will be completely or partially closed because of the COVID-19 pandemic.

Planning Confidence

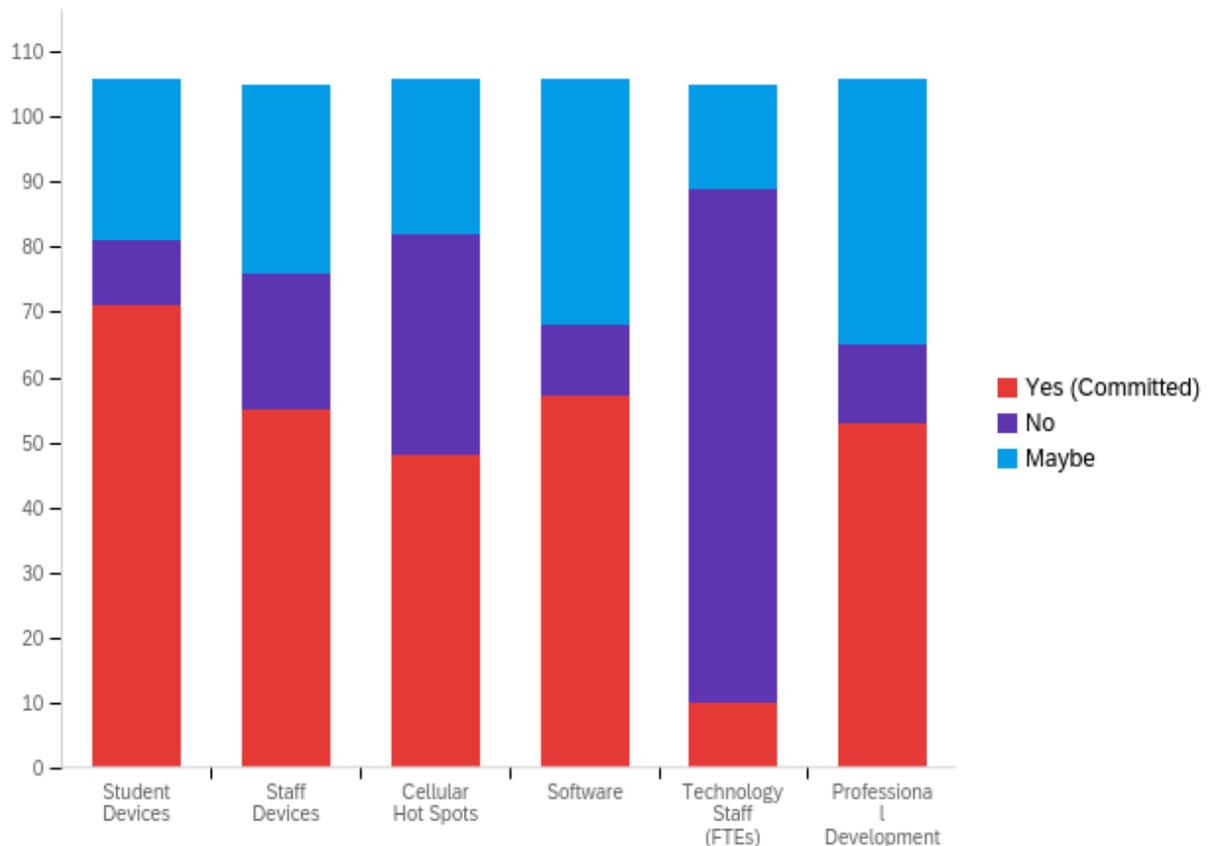
Q: To what degree has your district planned for technology-related investments to support remote learning?



As of late April, three-quarters of districts had either committed or were well underway to planning technology investments to support remote learning.

Types of Investments

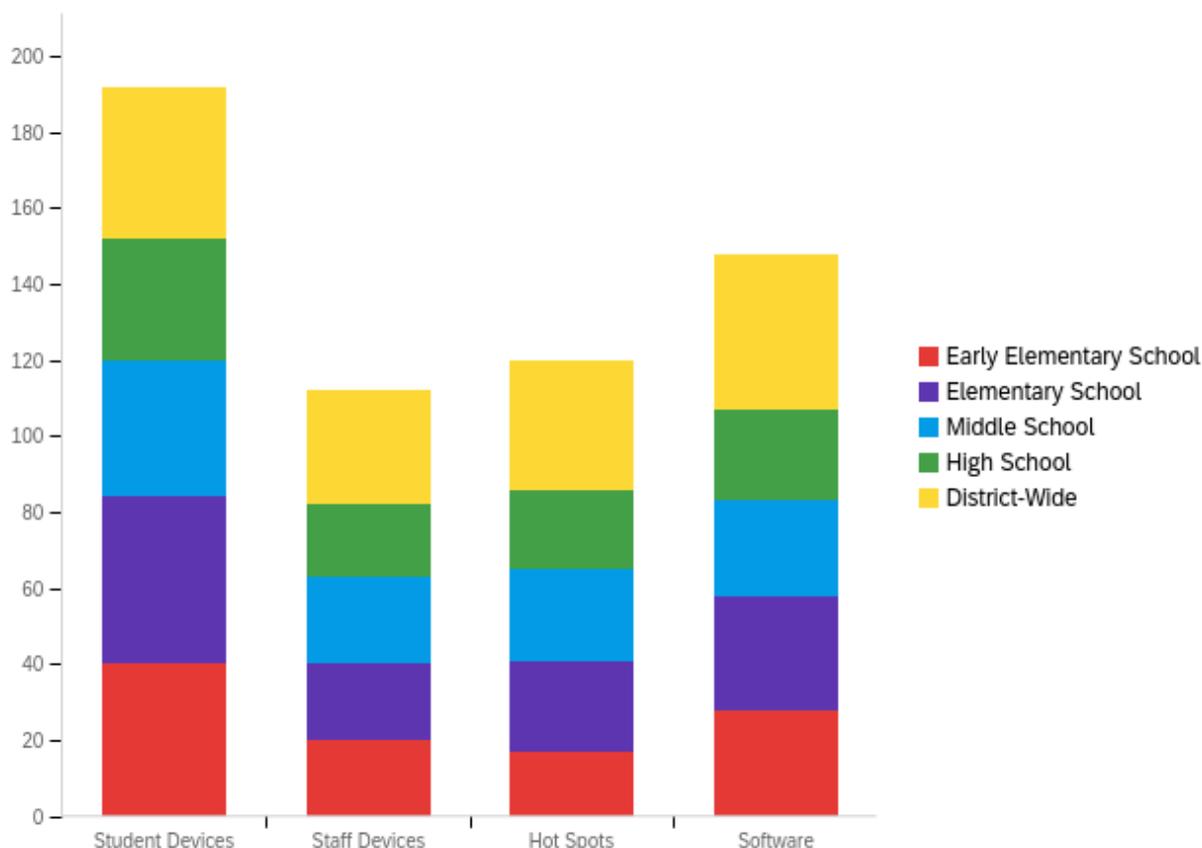
Q: What type(s) of additional technology investments has your district already committed to or is considering in order to support remote learning during Coronavirus-related school closures? Investments may come from local (district) budgets, federal stimulus funds, or gifts from organizations such as the Partnership for Connecticut. Select all that apply.



Districts have considered or committed to a variety of technology-related investments, though few plan to increase technology staffing levels to support new devices, software, or training needs.

Devices by Grade Level

Q: At what grade level(s) have you purchased or plan to buy additional devices, hot spots, and educational software? Select all that apply and check at least one box in each row.



Student devices and software remain the top technology investment priorities for districts to support remote learning.

Additional Technology Staff

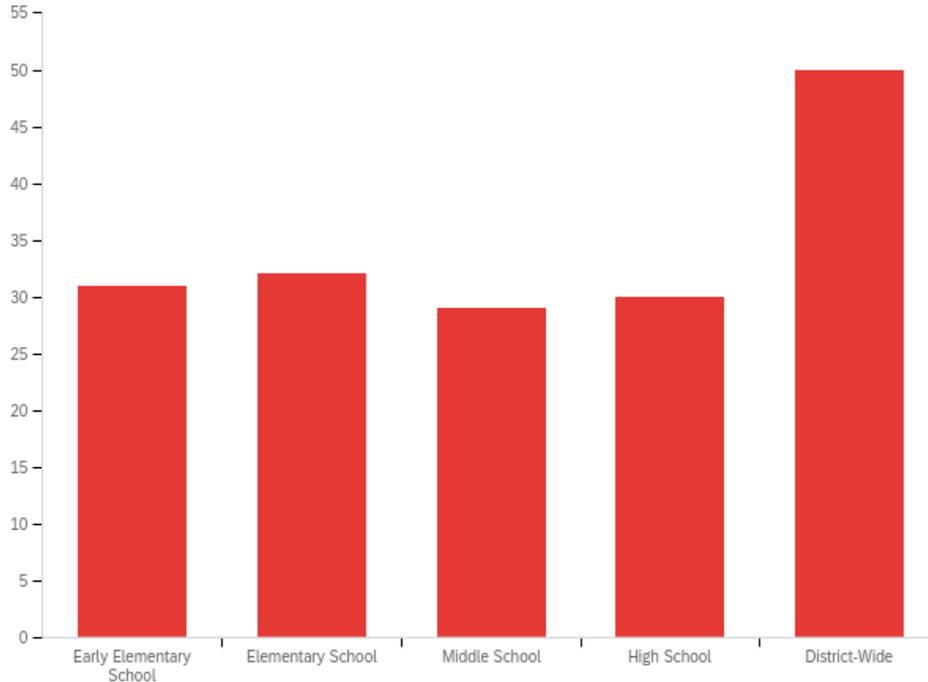
Q: How many additional technology staff — both district employees and contractors — do you plan to hire to support remote learning?



The survey asked for projected district and contracted staff increases across grade levels. Only four (4) districts with combined enrollments of nearly 43,000 students indicated that they planned to hire a total of 18 new technical staff, despite statewide increases in committed technology investments.

Professional Development

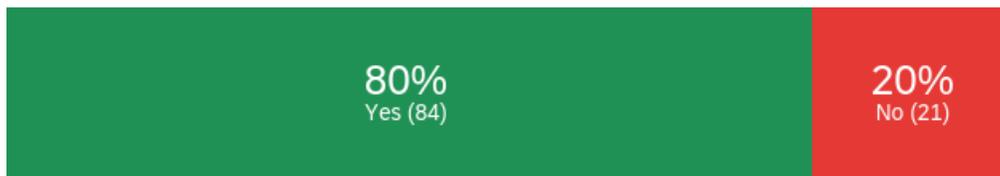
Q: At what levels do you plan to invest in additional professional development to support remote learning? Select all that apply.



Next to devices and software, schools have prioritized training (professional development) as an investment priority across multiple grades or their entire district.

Collective or Volume Purchasing

Q: Do you have interest in exploring common hardware, software, or professional development needs across districts to support remote learning? If you answer "Yes," we will follow up to discuss next steps.



The Commission, in partnership with the Department of Administrative Services (DAS) provided competitive pricing through a reverse auction on devices and continues to pursue cost efficiencies for common K – 12 technology needs.

Cost Savings

Q: Describe any technology-related cost savings that your district has already appreciated or expects to appreciate because of remote learning (e.g., reduced contractor maintenance fees).

A large number of software companies have provided us free online resources that our teachers now want us to purchase for use going forward. Examples are Kami, Smart Music, Discovery Ed, Newsela, and Mango.

A lot of software that we normally wouldn't get the opportunity to use (cost) is free to districts working remotely.

Aside from free offers such as Google Enterprise for Education, most of our costs were built into the budget. Vendors like Google are offering additional services for free but no discounts.

Chromebook pricing, maintenance fees.

Free resources due to coronavirus.

General supplies, contractor support, hardware maintenance.

Hardware maintenance repairs.

Indirect cost avoidance of getting more technology projects completed as tech staff continues to work [in buildings] as the rest of the staff attempts to work from home. For example, we will finish our upgrade to Windows 10 and Office 2019. We also have a document scanning project that has been lingering. Hopefully we will get it done now.

Ink, paper, printer costs.

We have added costs (software, hotspots, off-campus filtering) but no cost savings in technology.

OER, IP Phones, 365 level of subscription

Possibly some power savings.

Printer contract may come in low next year because the page count is going to drop.

Printer toner.

Printing near zero; potential \$30,000 savings to the end of the year.

Reduced copy (cost per page).

Reduced operating fees because buildings are not in use, substitutes are not being utilized.

Reduced print management costs (no printers).

reduced audio-visual expenses (support contract, parts, repairs).

Reduced network jack repairs and adds.

Reducing power usage and PC upkeep costs by moving to Chromebooks.

Reduction in device repairs (Chromebooks and desktops).

Reduction to print and copier usage costs.

Saved internal energy costs.

Software and curriculum for distance learning. Also, PD to make staff better equipped for distance learning.

We are not seeing any cost savings related to technology with Distant learning. In fact, we have incurred additional expenses for added grades to our monitoring software.

We have yet to perform a comprehensive assessment of reduced or incurred expenses as a result of COVID-19.

Other Thoughts and Suggestions

Q: Please share any other feedback on technology-related investments to support remote learning.

Added Seesaw for K – 2 at-home learning.

As we continue through distance learning, technology plans and purchases will change depending on the needs and feedback of the staff.

Assistance with paying for home Internet for students long-term would be helpful. We supplied every family without Internet with a hotspot; we would like to continue this permanently if feasible.

BOE considering a shift to a HS 1:1 program using Chromebooks and the Google Education platform.

We have been using remote learning for 3+ years in varying degrees. Our biggest challenges are getting younger grades access to technology as we have a very small budget.

Currently our district has committed to providing families that do not have Internet access with hotspots.

I would like to see something where we use just one two programs at a reduced rate to do the common tasks every district needs to support. Like everyone uses GoGuardian and we get it at a much-reduced price. Maybe even using something like Gaggle to help protect our students from a lack of access to counseling and direct contact with professionals. There are many options, and most are too expensive to use and are only being used because they were offered for free but are things that we should use going forward but won't, due to cost.

If would be WONDERFUL if the State continues the single sign-up for the Student Data Privacy law on LearnPlatform and couples it with negotiating state discounted prices for any vendors who sign similar to when we use the DAS portal to buy off of State-approved bids. We would all save a great deal of money and be able to better support colleagues and share resources between districts, and students moving from district to district would have the advantage of knowing the platforms used in their old school.

Looking at extending off-site filtering coverage to all grade levels. Expanding 1:1 to include all grades, as our program is currently grades 2 – 12. Devices sent home for remote learning will likely see breakage and required repairs. Teacher PL and subscriptions may increase to support new demands.

Our model was cart-based 1:1 in schools with a plan to go take-home [in grades] 5 – 8 in fall 2020. We have now accelerated that and have pulled from our inventory to address need for devices. There is the underlying possibility that we will come up short when/if we return to school as far as devices depending on the return rate. While a district can put agreements in place for devices, these are low cost and are hard to really go after given the circumstances. We are expecting a net loss on this.

Our teachers are enjoying the resources being offered for free. Many promising practices have been developed, and we'd like to continue using the resources next year, but with budgets likely being cut further, we will not be able to continue use once resources revert to usual cost.

Providing more hours per day of remote support to teachers and parents.

Purchasing additional Chromebooks for student's in K – 2 and the remainder of staff, paraprofessionals, etc.

Shifting from supporting devices on our own network to supporting our devices on employee or family-owned networks has been challenging. Remote-support tools such as LogMeIn Rescue have been helpful but costly. Day-to-day operations are challenging, exacerbated by the contagious nature of the COVID-19 virus requiring social distancing and the need for personal protective equipment just to swap out equipment or physically work on devices.

Since we were 1:1 from [grades] 2 – 12, our transition was much easier than a district that may not have been 1:1. Our only issue was that our elementary students were not taking devices home, and we had to transition after school was closed.

Some investments can include exposures with current technology. With districts giving out Chromebooks, there will be anticipated damages, replacements, and device return issues when school is back in session. Districts may have to invest in fixing or replacing current hardware if families are not expected to accept responsibility. This can also be true for devices provided to faculty and staff.

Support for home Wi-Fi expenses is an area to explore further.

Thank you for collecting this information. The question about adding more staff hopefully will be asked again in the future. No time to impact the budget now. Hopefully this will open the eyes of those who make decisions as these minimal investments could/will payoff ten-fold. I have been trying to sell this for years and have made about 50% progress. We are lucky!

the biggest concern I have is the identification of, and conversion to, fee-based products when our teachers have embraced many applications that have been free over this timeframe.

The rapid implementation of our distance learning has stressed-out teachers and administration and it is now stressing out our parents. Although we have a full 98% of our students actively involved, including our special education supports, we have a few families that have not been involved in any distance learning even after numerous attempts to reach out. We are now actively planning for our post-COVID learning process. How much of what we have experienced in distance learning will remain in our classrooms when students return? I also believe that our PD has forever changed with distance learning for all our staff.

We are finding that a lot of the teachers are using document cameras. I think I am going to look at some of the interactive devices for whiteboards that might be portable.

We are using a number of free services in addition to our contracted services. We were in a good position to help support remote learning. We only had to purchase five hot spots for students who did not have Internet at home.

We bought LogMeIn Rescue (free for now) as a way to remotely support users.

We didn't have a 1:1 program with devices that go home before remote learning, but we do have a Chromebook for every student in grades 1 – 12. We gave out more than 850 Chromebooks to families for remote learning.

We have a remote support site and an equipment-swap program open twice a week at different locations. We have 1,600 students and receive about 10 to 20 equipment swaps twice a week. Damage is very high, and my staff is struggling to keep up. This could eventually lead to the purchase of a significant amount of student hardware. Teacher hardware has to be modified (e.g., add Webcam) in order to provide video. IP-based phones (such as Google Voice or Skype) have to be invested in for routing district phones to key personnel, and headsets ordered. That's about all that's on our list.

We have purchased Rescue Assist for our technicians. We also purchased Chromebooks and iPads.